

Appl. No. 10/709,783
Docket No. 146128CT/GEM-0119

REMARKS / ARGUMENTS

Status of Claims

Claims 1-21 are pending in the application. Claims 1-21 stand rejected. Applicant has added new Claims 22 and 23, leaving Claims 1-23 for consideration upon entry of the present Amendment.

Applicant respectfully submits that the rejections under 35 U.S.C. §102(e) and 35 U.S.C. §103(a) have been traversed, that no new matter has been entered, and that the application is in condition for allowance.

Rejections Under 35 U.S.C. §102(e)

Claims 1-3 and 5 stand rejected under 35 U.S.C. §102(e) as being anticipated by Acker (U.S. Patent No. 6,580,938, hereinafter Acker).

Applicant traverses this rejection for the following reasons.

Applicant respectfully submits that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, *in a single prior art reference.*" *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). Moreover, "[t]he identical invention must be shown in as complete detail as is contained in the *** claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Furthermore, the single source must disclose all of the claimed elements "arranged as in the claim." *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984). Missing elements may not be supplied by the knowledge of one skilled in the art or the disclosure of another reference. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 780, 227 U.S.P.Q. 773, 777 (Fed. Cir. 1985).

Regarding Independent Claim 1

Dependent claims inherit all of the limitations of the respective parent claim.

In rejecting Claim 1, the Examiner alleges "Acker discloses a method and system

Appl. No. 10/709,783
Docket No. 146128CT/GEM-0119

for image guidance of a probe wherein a plurality of images are acquired, in one embodiment by CT, at a selected respiratory state (col 7, lines 60-66) on which entry and target positions may be displayed along with a trajectory computed between the two (figure 1, elements A', T, and 66). The probe is advanced when the patient is in the selected respiratory state (col 3, line 50), which is determined when motion due to respiration is within a predetermined tolerance of the desired respiratory state (col 10, lines 3-4)." (Paper 12082005, page 2).

Applicant respectfully disagrees that Acker discloses each and every element of the claimed invention arranged as claimed.

Applicant finds Acker to disclose "The physician advances the distal end 26 of the probe into the respiratory system of the patient in the conventional manner. Typically, the distal end of the probe is advanced *through an airway A* as, for example, *through the larynx and trachea into the bronchi*." (Acker, col 10, lines 10-14) (Emphasis added). Applicant also finds Acker to disclose "The system may also generate a line or arrow 66 on the displayed image showing the *trajectory from the probe distal tip to the target*." (Acker, col 10, lines 40-42) (Emphasis added).

Here, Applicant finds Acker to disclose a trajectory (arrow 66) defined by the distal tip of the probe and the target. Accordingly, Applicant finds the Acker trajectory to be based on the distal tip of the probe and the target position.

In comparing Acker with the claimed invention, Applicant submits that Acker is absent disclosure of the claimed "...skin entry position on at least one of the digital images..." as well as the claimed "...trajectory path based on the skin entry position and the target position". Applicant further submits that the skin entry position is substantially different from the distal tip of the probe, as the skin entry position does not change with time whereas the position of the distal tip of the probe does.

In view of the foregoing, Applicant submits that Acker is absent anticipatory disclosure of each and every element of the claimed invention arranged as claimed, and therefore cannot be anticipatory.

Appl. No. 10/709,783
Docket No. 146128CT/GEM-0119

Regarding Claim 3 More Specifically

In addition to the foregoing, Applicant finds Acker to disclose "During the advancing step, the disposition of the probe is determined in a locating frame of reference when the patient is at the aforesaid selected respiratory state" (Col 3, lines 50-53) (Emphasis added), and "The patient continues to breathe while the probe is advanced into the airway. A new probe position is acquired on each respiratory cycle when the patient reaches the minimum inhalation state. Each time a new probe position is acquired, the display shown on CRT screen 46 is revised to conform with the new probe position." (Col 10, lines 55-61) (Emphasis added). In comparing Acker with the current invention, Applicant submits that Acker is absent disclosure of the "...moving the end effector along the trajectory path ... when the person has substantially the predetermined respiratory state", as claimed for in Claim 1. Applicant also submits that Acker is absent disclosure of "...moving the end effector along the trajectory path when a difference between the monitored respiratory state and the predetermined respiratory state is less than or equal to a threshold value", as claimed for in Claim 3.

Absent anticipatory disclosure of each and every element arranged as claimed, Acker cannot be anticipatory.

In view of the foregoing remarks, Applicant submits that Acker does not disclose each and every element of the claimed invention arranged as claimed and therefore cannot be anticipatory. Accordingly, Applicant respectfully submits that the Examiner's rejection under 35 U.S.C. §102(e) has been traversed, and requests that the Examiner reconsider and withdraw of this rejection.

Rejections Under 35 U.S.C. §103(a)

Claims 4, 6, 8-21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Acker in view of Stoianovici et al. (U.S. Patent Publication No. 2004/0162486, hereinafter Stoianovici).

Appl. No. 10/709,783
Docket No. 146128CT/GEM-0119

Claim 7 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Acker and Stoianovici as applied to claim 6 above, and further in view of Schweikard, et al. (U.S. Patent No. 6,144,875, hereinafter Schweikard).

Applicant traverses these rejections for the following reasons.

Applicant respectfully submits that the obviousness rejection based on the References is improper as the References fail to teach or suggest each and every element of the instant invention arranged in such a manner as to perform as the claimed invention performs. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). The Examiner must meet the burden of establishing that all elements of the invention are taught or suggested in the prior art. MPEP §2143.03.

Additionally, Applicant respectfully submits that obviousness cannot be supported by a proposed modification that would render the prior art invention being modified unsatisfactory for its intended purpose. *In re Gordon*, 221 USPQ 1125 (Fed. Cir 1984); MPEP §2143.01.

Regarding Dependent Claim 4

Dependent claims inherit all of the limitations of the respective parent claim and any intervening claim.

Applicant respectfully submits that the deficiencies of Acker as set forth in the remarks above with reference to Claim 1 are not cured by Stoianovici, and for at least this reason Claim 4 is directed to allowable subject matter as being dependent upon an allowable claim.

Regarding Independent Claims 6, 15, 16, and 21

The Examiner acknowledges that Acker is deficient in disclosing the use of robotic devices in computer-assisted surgery, and looks to Stoianovici to cure the deficiency.

Dependent claims inherit all of the limitations of the respective parent claim and any intervening claim.

Appl. No. 10/709,783
Docket No. 146128CT/OEM-0119

Claims 6, 15 and 16, recite inter alia, "...indicate a skin entry position... indicate the target position... determine *a trajectory path based on* the skin entry position and the target position...", which are also elements of independent Claim 1.

In view of Applicants remarks above regarding Claim 1, Applicant respectfully submits that these deficiencies of Acker are not cured by Stoianovici, and therefore a prima facie case of obviousness cannot be established.

Furthermore, the Examiner alleges that "The system is coupled with a percutaneous access of the kidney (PAKY) needle driver wherein the computer assisted surgery robot aligns the needle (paragraph 30) and the needle is then driven along the trajectory calculated between the target and skin entry points (paragraphs 41 and 65) selected by the user. As the movement of the needle is determined by the hardware controlling the PAKY needle driver system the speed and movement of the needle is inherently predetermined by the computer and sent to the robot moving the needle (figure 1)." (Paper 12082005, page 3).

In comparing Stoianovici with the claimed invention, Applicant finds Stoianovici to disclose "At the radiologist's command the needle was inserted under direct fluoro supervision." (Stoianovici, paragraph [0065]). Applicant submits that Stoianovici does not disclose the "...computer inducing the end effector insertion device to move the end effector along the trajectory path toward the target position when the person has substantially the predetermined respiratory state", as claimed for in Claims 6 and 15. Applicant also submits that Stoianovici does not disclose "...moving the end effector along the trajectory path toward the target position when the person has substantially the predetermined respiratory state", as claimed for in Claims 16 and 21.

Accordingly, Applicant respectfully submits that the combination of Acker and Stoianovici fail to teach or suggest each and every element of the claimed invention arranged in such a manner as to perform as the claimed invention performs, and therefore cannot properly be used to establish a prima facie case of obviousness.

Yet furthermore, in comparing the combination of Acker and Stoianovici with the instant invention, Applicant finds Acker to disclose "...the probe is *advanced through an*

App'n. No. 10/709,783
Docket No. 146128CT/GEM-0119

Airway A as, for example, through the larynx and trachea...*external field transducers 40 cooperate with probe field transducer 30 to determine the position of ...the probe...*" (Acker, col 10, lines 12-17), and submits that incorporation of the "...*robot ... used to orient a needle*" while maintaining its initial tip location and to perform the insertion of the needle" (Stoianovici, Paragraph [0027]) as taught by Stoianovici and suggested by the Examiner would render the respiratory probe transducer guidance system disclosed by Acker unsatisfactory for its intended purpose (an airway probe with transducer positioning that is modified by a robotic needle guidance system would render the Acker airway probe with transducer positioning unsatisfactory for its intended purpose as the "transducer positioning" would be rendered moot by the introduction of the robotic needle guidance system). As such, Applicant submits that there is no motivation to modify Acker as suggested by Stoianovici and alleged by the Examiner.

Accordingly, Applicant submits that Stoianovici is absent any teaching, suggestion, or motivation to modify Acker for the purpose of arriving at the claimed invention while maintaining Acker to be satisfactory for its intended purpose. As such, Applicant submits that absent a motivation to combine the references as alleged by the Examiner, a prima facie case of obviousness cannot be established.

In view of the foregoing, Applicant submits that the References fail to teach or suggest each and every element of the claimed invention arranged to perform as the claimed invention performs and are therefore wholly inadequate in their teaching of the claimed invention as a whole, and fail to motivate one skilled in the art to do what the patent Applicant has done as such a combination would render the prior art being modified unsatisfactory for its intended purpose, and therefore cannot properly be used to establish a prima facie case of obviousness. Accordingly, Applicant respectfully requests reconsideration and withdrawal of all rejections under 35 U.S.C. §103(a), which Applicant considers to be traversed.

App'n. No. 10/709,783
Docket No. 146128CT/GEM-0119

In light of the forgoing, Applicant respectfully submits that the Examiner's rejections under 35 U.S.C. §102(b) and 35 U.S.C. §103(a) have been traversed, and respectfully requests that the Examiner reconsider and withdraw these rejections.

Regarding New Claims 22 and 23

Applicant has added new Claims 22 and 23, which each depend from Claim 1, to now claim disclosed but previously unclaimed subject matter. No new matter has been added as antecedent support may be found in the application as originally filed, such as at Paragraphs [0031], [0067], [0070], and the originally filed claims, for example.

In view of the remarks set forth above regarding the allowability of Claim 1, Applicant submits that new Claims 22 and 23 are directed to allowable subject matter and respectfully requests entry and notice of allowance thereof.

Appl. No. 10/709,783
Docket No. 146128CT/GEM-0119

The Commissioner is hereby authorized to charge any additional fees that may be required for this amendment, or credit any overpayment, to Deposit Account No. 07-0845.

In the event that an extension of time is required, or may be required in addition to that requested in a petition for extension of time, the Commissioner is requested to grant a petition for that extension of time that is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to the above-identified Deposit Account.

Respectfully submitted,

CANTOR COLBURN LLP

Applicant's Attorneys

By: 

David Arnold
Registration No: 48,894
Customer No. 23413

Address: 55 Griffin Road South, Bloomfield, Connecticut 06002
Telephone: (860) 286-2929
Fax: (860) 286-0115